Spring 2016

Water Current, Volume 48, No. 2, Spring 2016

WATER CURRENT

NEBRASKA WATER CENTER
PART OF THE ROBERT B. DAUGHERTY WATER FOR FOOD INSTITUTE AT THE UNIVERSITY OF NEBRASKA

SPRING 2016 VOL. 48, NO. 2

2016 tour to Colorado's South Platte basin June 14-16

The summer water and natural resources tour will spend part of an afternoon rafting in Colorado's high country.

The annual water and natural resources tour, hosted by the University of Nebraska's Nebraska Water Center (NWC) and The Central Nebraska Public Power and Irrigation District (CNPPID), will visit Colorado this summer.

The June 14-16 tour will travel through Colorado's central Front Range area and into the interior of the Rocky Mountains.

Attention in the Denver area will center on growing urban water demands stemming from rapidly expanding population, industry and recreation.

Diverse stops and topics in the Denver area include water quality and the Coors brewery, climate change, changes in water runoff patterns caused by recent pine wilt beetle infestations, the role of the Denver Water utility and other topics.

The tour will examine many issues related to water and natural resources in the South Platte basin and Denver metro area.

"Basin water use and development in Denver and the surrounding metropolitan area, including ongoing conversion of former agricultural water rights to urban and suburban use as the area continues to grow are obviously huge considerations and will be closely examined on tour from a number of angles," said NWC communicator Steve Ress, a tour co-organizer.

In the high country of nearby Summit County, recreation and tourism drive the area's economy, and water use, and those issues will be closely explored as tour participants get a look at research and restoration projects aimed at preserving abundant water supplies and a healthy environment.

Tour participants will see the snow-making industry, spend part of an afternoon rafting Clear Creek and will be exposed to the history, ramifications and continuing environmental issues associated with the area's 19th Century gold and silver mining industry that helped open much of Central Colorado to western settlement.

Colorado's first state water plan, shared use of water under a Nebraska-Colorado compact and many other topics will also be examined.

Registrations can be made through CNPPID in Holdrege. The tour departs from the Holiday Inn Express and Suites DIA Hotel in Denver at 7 a.m. on Tuesday, June 14. Tour participants are responsible

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Inside

Water for Food
ROBERT B. DAUGHERTY INSTITUTE
NEBRASKA WATER CENTER
at the University of Nebraska

Success with grant applications and student programs; upcoming events

From the Director
Chittaranjan Ray, Ph.D., P.E.

Perhaps my biggest single item of news, since the last Water Current published is that the Nebraska Water Center (NWC) is receiving a $977,087 grant from U.S. Department of Agriculture/ NIFA for the University of Nebraska-Lincoln component of a regional project on "Sustaining Agriculture through Adaptive Management to Preserve the Ogallala Aquifer under a Changing Climate", which is being led by Colorado State University and also involves Kansas State, Oklahoma State and New Mexico State Universities as well as Texas A&M, AgriLife and Texas Tech University.

In addition, the USDA Climate Hub in Cheyenne, Wyo. and USDA-ARS research center in Bushland, Texas are collaborating. The project's long-term goal is to optimize the use of groundwater in the Ogallala Aquifer region to sustain food production systems, rural communities and ecosystem services.

The project, which involves several UNL faculty fellows, seeks to integrate hydrologic, crop, soil, and climate models; develop best irrigation technologies, tools, and crop management practices; analyze social, policy, and economic frameworks to identify incentives and policies for adaptive management; and enable the adoption of tools and strategies to improve water conservation.

We are very excited and grateful to be receiving this collaborative grant. It is in part a tribute to the diverse pool of talented water faculty we have here, which is more and more allowing us to be competitive for these high-level, interdisciplinary federal grants.

In addition to my fellow faculty on the grant, I want to thank Daugherty Water for Food Institute grant coordinator Karen Hansen for her close and careful work in helping me coordinate this proposal.

Since the beginning of the year, we have been very far-reaching in submitting research proposals in a number of different areas and have had good success in getting several grants accepted for funding.

For my part, I have submitted to various local and national funding agencies, including the UNL Agricultural Research Division Williams Fund, Nebraska Department of Environmental Quality, Water Resources Research Center at the University of Hawaii, U.S. Department of the Interior, National Science Foundation and Indo-U.S. Science and Technology Forum.

During this period, the NWC was notified of the approval of proposals that in total equal slightly more than $1.59 million, including the USDA/NIFA grant mentioned earlier.

Among these are:

- ARD Williams Fund, Evaluation of Denitrification in the Vadose Zone (D'Allesio, Ray $60,000)
- Nebraska Environmental Trust fund, integrating the vadose zone for improved management of Nebraska's ground water quality (Ray, $384,227)
- Nebraska Department of Environmental Quality, Nebraska Vadose Zone Nitrate Assessment (Snow, Ray, $95,000)
- USGS Nebraska Water Resources 104B 2016 (Ray, $92,335)

In addition to work on proposals, there has been a great deal of activity in many other arenas at the NWC since this column last appeared.

In March I was in India for a week with representatives from the UNL Chancellor's office to discuss reciprocal visits of Nebraska students to Indian institutions and vice versa under the Water Advanced Research and Innovation (WARI) fellowship program.

I have also been closely involved in the International Research Experiences for Students, or IRES, program that will help four of our UNL science and engineering students to do collaborative research work at Czech Technical University in Prague this summer. I was very gratified that we had 18 applicants for this program.

Also in March, Dan Snow, director of the Water Sciences Laboratory, my doctoral student Matteo D'Alessio, and I visited the Fairbury and Auburn areas to select sites for monitoring surface water and well water for water quality for a project to evaluate the effectiveness of bank filtration and natural filtration.

Early in the month, Snow and I offered a half-day workshop on vadose zone nitrates to natural resource district hydrologists in Kearney and I attended the Tri-State Irrigation Conference there, which turned-out to be an excellent conference where many of our newer faculty were involved and gave presentations.

In February we had a very productive faculty research retreat at UNL's city campus union, which, in addition to faculty, was attended by several federal and state agency cooperators. Our next such retreat will be Aug. 30 at Lincoln's Wilderness Ridge Lodge.

In late January and early February I was back in Honolulu, Hi. for a few days to work on a proposal for the Hawaii Department of Agriculture along with the Water Resources Research Institute at the University of Hawaii. The Hawaii Department of Agriculture will spend $400,000 to conduct a leaching study of several new chemicals needed for agricultural use.

UNL was asked to lead it, but because of distance and logistics, that is impractical, so I found a person at UH that can do it and we will subcontract to analyze the data and prepare the report.

With Jesse Starita from WFI, I also attended the annual meetings of the National Institute of Water Resources, where 49 out of 54 water center directors were in attendance. Jesse delivered a short presentation about our stakeholder engagement and international programs and we visited the offices of our congressional delegation.

By the time you read this, we should be very close to hiring a joint NWC, UNL Extension and Daugherty Water for Food full-time communications liaison position. This new position will largely be responsible for close contact with our constituents and clients, such as the NRDs, state and federal agencies, nonprofit groups, irrigation districts, etc. in looking for areas where we can cooperate and work together and in identifying needs and challenges they may have where our University resources may be able to help them. There were some very well qualified candidates that applied for the position, so we are very confident that we will end-up with the best possible fit for the position.

Concerning upcoming events, the summer water and natural resources tour will be June 14-16 in the South Platte and Colorado River basins in Central Colorado and the Denver metropolitan area. We plan to explore Colorado's ever growing urban and recreational water use in the basins and what affects those can and do have on downstream Nebraska. We will also get a look at Colorado's first-ever state water plan and see what the recent pine wilt beetle infestation has had on runoff patterns, the logging industry and other issues. There has been very wide interest in the tour and we fully expect that by the time you read this, most, if not all, of the tour bus seats will be sold. To see if there are seats still available, contact Holly Rahmann at The Central Nebraska Public Power and Irrigation District in Holdrege at (308) 995-3560 or email hrahmann@cnppid.com.

Additionally, we are very indebted to our tour sponsors this year, of which there are a near record number: In addition to the NWC and CNPPID, they include the Daugherty Water for Food Institute at the University of Nebraska, UNL's Institute of Agriculture and Natural Resources, Nebraska Public Power District, the Lower Platte North Natural Resources District, Li-COR Biosciences and the Nebraska Water Balance Alliance.

Our next water faculty collaboration retreat will be Aug. 30 at Lincoln's Wilderness Ridge Lodge. You will soon be hearing more about that via email, internet and social media.

Our annual one-day Nebraska water symposium and one-day Nebraska water law conference will be Thursday, Oct. 20 and Friday, Oct. 21, respectively. Both events will be held here, at Nebraska Innovation Campus.

Detail planning for both these events is just getting underway, but the symposium will be centered on presentations and panel discussions centered on the Upper and Lower Platte River basins, as well as the Republican, Blue and Niobrara Rivers. As always, the law conference will focus on the latest in Nebraska water law, primarily for water professionals and practicing attorneys.

Early spring planning for this year's UNL Extension and IANR Husker Harvest Days displays near Grand Island. The show is in September.

Norman Uphoff (center, left) of Cornell University in New York, meets with faculty and staff of the Nebraska Water Center and Daugherty Water for Food Institute. Uphoff was one of several special speakers over the past few months.

This newsletter is published with partial financial support from the Department of the Interior; U.S. Geological Survey. The content does not necessarily reflect the views and policies of the Department of the Interior, nor does mention of trade names or commercial products constitute endorsement by the U.S. Government.

Director
Chittaranjan Ray, Ph.D., P.E.

Director of Laboratory Services,
Water Sciences Laboratory
Daniel D. Snow, Ph.D.

Editor
Steven W. Ress

Designer
Taylor DeMaro

Nebraska Water Center
Robert B. Daugherty Water for Food Institute
University of Nebraska
2021 Transformation Drive, Suite 3220
P.O. Box 886204
Lincoln, NE 68588-6204
Phone: (402) 472-3305
e-mail: sress@nebraska.edu

NebrWaterCenter NebraskaWaterCenter

Ogallala Aquifer is focus of new USDA-funded research project

For more than 80 years, the Ogallala Aquifer, the largest freshwater aquifer in the world, has been the main source of agricultural and public water for Nebraska and parts of seven other states. Now researchers from the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln, the Robert B. Daugherty Water for Food Institute at the University of Nebraska and the Nebraska Water Center will play key roles as part of a U.S. Department of Agriculture National Institute of Food and Agriculture-funded consortium to address agricultural sustainability on the aquifer.

The consortium has been awarded a USDA Water for Agriculture Challenge Area Coordinated Agricultural Project grant, which will provide $10 million over four years for research and extension activities to address water challenges in the Ogallala Aquifer region. The grant will take a comprehensive approach, integrating management strategies to improve water use across the region.

"It is wonderful to have this exciting announcement on World Water Day," said Roberto Lenton, founding executive director, Water for Food Institute. "It highlights the importance of water and its vital role in agricultural production–especially in Nebraska and our neighboring states."

The Ogallala Aquifer region accounts for 30 percent of total crop and animal production in the United States, and more than 90 percent of the water pumped from the aquifer is used for irrigated agriculture. With climate change projections and recent declines of groundwater, the aquifer, along with many of the world's aquifers, is declining on a path many consider to be unsustainable.

Groundwater levels and management practices vary greatly across the Ogallala Aquifer region. While the aquifer is at a high level in Nebraska, it is more depleted in states to the south. This project seeks to develop a successful model of integration that leads to wide-scale changes in the management of the aquifer and informs aquifer management across the world.

"The Ogallala Aquifer is a vast resource that is vitally important to Nebraska agriculture and to our state's ag economy, but it is not endless and needs to be used and cared for wisely and sustainably," said Chittaranjan Ray, director of the Nebraska Water Center.

As part of the project, Ray will take a leading role in gathering adequate hydrologic and crop water use data, which can be used to manage pumping rates. A comprehensive hydrologic model exists for the Northern High Plains region of the Ogallala, but an aquifer-wide hydrologic model has never been created. An expanded model will provide an important baseline tool to estimate climate change and management impacts on groundwater levels across the region.

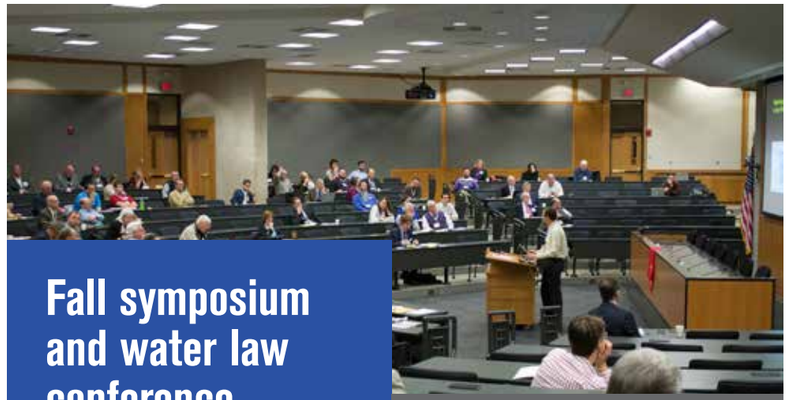
"This project recognizes and will build upon a wealth of knowledge and previous aquifer research to build a useable baseline of data on water levels, pumpage dynamics, institutional controls and climatic variability," Ray said. "This data will be used to develop the best cropping management and irrigation technologies that will help maintain aquifer health into the future, keeping appropriate economic and social issues in mind."

While gathering this data is challenging, Ray will rely on Nebraska Water Center's longstanding connections with other groups that also have a history of addressing the state's water issues.

To implement the project tasks associated with the grant, the Nebraska team will establish communication networks across the region. In addition, the project will look to inform non-farm consumers about the role of water in food production. The team anticipates an improved understanding of climate change impacts on water resources and the identification of emerging technologies and management practices that could extend the life of the aquifer.

Co-investigators from UNL are Tim Shaver, agronomist and nutrient management specialist; Daran Rudnick, Water for Food Institute faculty fellow and irrigation management specialist; and Karina Schoengold, Water for Food Institute faculty fellow and environmental and resource economist.

The multi-disciplinary consortium includes scientists at Colorado State University, Kansas State University, Oklahoma State University, New Mexico State University, Texas Tech University, West Texas A&M University, Texas A&M AgriLife and the USDA Agricultural Research Service.



The water symposium and water law conference are Oct. 20 and 21 at Nebraska Innovation Campus.

Fall symposium and water law conference

Steve Ress

The Nebraska Water Center's (NWC) annual water symposium is Thursday, Oct. 20, followed by a jointly sponsored NWC/ University of Nebraska College of Law water law conference on Friday, Oct. 21.

For the first time, both events will be held at Nebraska Innovation Campus, on the site of the former state fairgrounds in Lincoln.

Though planning is just beginning, the symposium will feature basin-level presentations and panel discussions centered on the Upper and Lower Platte River, Republican, Blue and Niobrara Rivers.

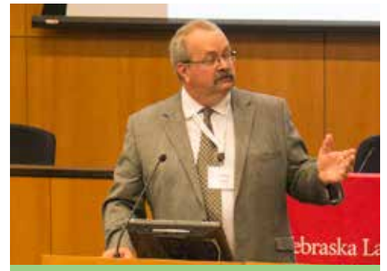
Among the speakers that have accepted invitations to present at the symposium are W. Don Nelson, executive publisher of Prairie Fire newspaper and former chief of staff for U.S. Senator Ben Nelson, Nebraska Department of Natural Resources director Jeff Fassett and Sutherland area farmer Roric Paulman, who is president of the Nebraska Water Balance Alliance.

In the afternoon, Joel Christensen of Omaha's Metropolitan Utilities District and Steve Owen, chief engineer of the Lincoln Water System, among others, will speak on Nebraska's municipal water concerns and challenges.

NWC director Chittaranjan Ray and Nebraska State Irrigation Association director Lee Orton are expected to round out the day's presentations.

An agenda for Oct 21's water law conference was developing as this issue of the Water Current went to press.

Developing details of both events will be online at watercenter.unl.edu as they become available.



Sutherland area farmer and NEWBA president Roric Paulman will speak at NWC's October water symposium.

New research on estimating soil water balance

Patricio Grassini, cropping systems agronomist

Patricio Grassini's research, extension and educational activities focus on narrowing the gap between actual and potential crop yield. He studies crop physiology, yield potential, simulation modeling and resource- and energy-use efficiencies across a diverse range of cropping systems, including dryland crops in South America and sub-Saharan Africa and high-yield irrigated corn-soybean systems in the U.S. Corn Belt.

He currently leads a project to benchmark on-farm yields and input-use efficiencies in irrigated corn-soybean systems in Nebraska to improve producer profits while protecting the environment. Patricio also leads the Yield Forecasting Center, which provides real time corn yield forecasts across a large number of locations in the U.S. Corn Belt. He is also helping to develop the Global Yield Gap and Water Productivity Atlas, an international effort to identify gaps between actual and potential yield for major cropping systems worldwide.

UNL's Vitaly Zlotnik (right).

UNL researcher applies expertise in aquifer recharge to arid regions

Since 2013, University of Nebraska-Lincoln hydrogeologist Vitaly Zlotnik has led UNL efforts to develop solutions to serious water issues in the Middle East, a region rife with political conflict and environmental challenges.

He provided a keynote address at the 2016 International Water Conference at Sultan Qaboos University in Oman in March, an interdisciplinary forum targeted to Gulf countries.

Zlotnik and other colleagues have helped UNL play an increasingly important role in research and collaboration among scientists, universities, government and others to help improve the region's water resources management.

Water scarcity in the Middle East and North Africa (MENA) is aggravated by population growth, political instability and lack of infrastructure for effective water resources management. The problem is further complicated by difficulties in developing research collaboration on a global scale. One thing is clear: mutually beneficial coexistence among all factions in the region will not be possible without finding water resources solutions, in addition to addressing its other critical challenges.

In 2013, several universities in the U.S. and MENA region joined efforts to solve water resources problems as part of the MENA Network of Water Centers of Excellence. These universities have vital resources and missions in common: active Water Center units and programs in water resources research, and a commitment to responsible and sustainable water use. This initiative originated from an informal organization, Friends of MENA, and was championed by former UNL Chancellor Harvey Perlman, who brought together academic leaders from the region for meetings in Nebraska. The U.S. Agency for International Development (USAID) supported the initiative through grants to the participants for fostering collaborations between MENA countries and the U.S., enhancing joint research and building research capacity in MENA countries.

Leveraging NU's substantial expertise in groundwater management, Zlotnik, a professor in UNL's Department of Earth and Atmospheric Sciences, launched a project in 2014 with colleagues from Sultan Qaboos University (SQU) in Oman and the University of Jordan (UJ) that focused on using treated wastewater more efficiently through Managed Aquifer Recharge (MAR). Zlotnik and his colleagues modelled aquifers to better characterize their properties, assessing their water storage and recharge potential, and developing a "toolbox" for water resources evaluations using MAR.

The major source of MAR in the region is wastewater from large-capacity sewage treatment plants such as Haya Water Company in Oman and Al Samra Plant in Jordan. In addition, occasional tropical cyclones in Oman result in heavy floods, providing a water source for infiltration through dry stream beds, called wadis. Thus, hundreds of millions of cubic meters of water can be saved for irrigation and industrial needs. However, this method uses sporadic, sparse or low quality surface water resources for replenishing exhausted aquifers through the water infiltration. And social, political and economical factors weigh heavily on MAR implementation in any country. Furthermore, MAR's technical feasibility must be assessed by hydrogeologists, engineers and economists as a starting point for any designs. This requires analyses of the aquifer properties, water savings capacity and waterlogging potential in populated areas.

Groundwater modeling facilitates MAR's design and application, both as a diagnostic and predictive tool and for creating monitoring networks for groundwater levels. The three universities combined their resources to address similar problems in Oman and Jordan, developing groundwater modeling approaches to MAR design in countries separated by more than 1,500 miles of deserts -- and 7,700 miles from Lincoln, Nebraska, to Muscat, Oman. The team, including Zlotnik and Glenn Ledder (UNL), Ali Al-Maktoumi, Anvar Kacimov, and Osman Abdalla (SQU, Oman), Marwan Al-Raggad (UJ, Jordan), Mustafa El-Rawy (Minia University, Egypt) began collecting data, developing conceptual models, running numerical simulations and providing water resources forecasts with implications for conjunctive use of surface- and groundwater.

In Oman, models for three MAR sites were developed, including an alluvial aquifer near Al-Khoud recharge dam, coastal Jamma aquifer (located more than 100 miles northwest) recharged by flash floods and vast wetlands resulting from treated wastewater disposal by Haya Water in Muscat. In Jordan, MAR of Hummar limestone aquifer was investigated at different scenarios using combinations of TWW discharge and groundwater withdrawals at As Samra Wastewater Treatment Plant under different scenarios of the plant capacity expansion.

The project is also focused on building MENA's capacity for research. A. Al-Maktoumi and M. Al-Raggad arranged five meetings and workshops in their universities, where all team members provided training for water resources managers, academics and students in Oman and Jordan. Participants included professional representatives from Oman's Ministry of Regional Municipalities and Water Resources, Jordan's Ministry of Water and Irrigation and Water Authority, the privately-owned Haya Water and other government agencies. For this purpose, UNL jointly with SQU developed a Toolbox for Training and Designing Managed Aquifer Recharge and several Guidelines for Numerical Modeling, used to train more than 30 professionals in both countries. These materials received positive feedback as they were presented at regional and international conferences attended by scientists from other Gulf countries and resulted in several papers published in international journals.

Many additional opportunities have been made possible by the project. The Robert B. Daugherty Water for Food Institute at the University of Nebraska invited MAR specialists from Oman and Jordan to its 2014 global conference in Seattle. Following this meeting, USAID extended funding to include UNL's National Drought Mitigation Center for new research in 2015. The Water for Food Institute also sponsored a student trip to Jordan to study water scarcity issues and their impact on refugees March 17-27.

One of the most important results of the project has been the strong working relationships UNL has forged with water scientists from Oman, Jordan and Egypt. With participation from the Water for Food Institute and the Nebraska Water Center, opportunities for future partnerships and additional funding are promising. Certainly, such cooperation, not known previously, will assist countries in using the MAR approach, along with addressing broader issues in water resources management.

Munoz-Arriola, hydroinformaticist and integrated hydrologist

Francisco Munoz-Arriola

Francisco Munoz-Arriola's research and extension activities focus on helping agricultural decision-makers more easily upload, transform, store and analyze water, agricultural, fuel consumption and weather/climate data to improve decision-making and our ability to predict the effects of extreme weather events on the sustainability of human activities and ecosystems.

Munoz-Arriola uses climate and hydrologic models and information technologies to study the interconnected processes of the water-food-energy nexus in a changing climate, as well as their impacts on agro-ecosystems and ecosystems sustainability.

He holds a doctorate in civil and environmental engineering from Duke University and completed two postdoctoral appointments at University of Washington and University of California, San Diego. He has a master's degree in coastal oceanography and bachelor's degree in oceanography from the Universidad Autónoma de Baja California.

UNL Chancellor Ronnie Green (center, right) addresses Water Resources Advisory Panel (WRAP) members at a late April breakfast meeting.

WRAP meets at NIC during global conference

Steve Ress

The University of Nebraska's Water Resources Advisory Panel (WRAP) met for informal breakfast discussions at Nebraska Innovation Campus on April 25 to take advantage of members attending the Daugherty Water for Food Institutes' global conference on "Catalytic collaborations."

Among those at the meeting were incoming University of Nebraska-Lincoln Chancellor Ronnie Green, UNL Institute of Agriculture and Natural Resources associate vice chancellor Ron Yoder, dean and director of UNL Extension Chuck Hibberd and UNL vice chancellor for research and economic development (ORED) Prem Paul.

Yoder reported that virtually all of the new water faculty positions previously identified for hire within IANR have been filled, most recently a water quality position.

Green, who was transitioning into his role as UNL's new chancellor at the time of the meeting noted that Yoder would be announced as IANR's interim vice chancellor in early May and that he hoped the search process for a new, permanent IANR vice chancellor could be completed by early 2017.

Hibberd said that UNL Extension would soon be hiring a new water quality educator to replace the retiring Sharon Skipton and noted that the formation of 18 extension issue-based teams that is currently underway will help the extension division better focus on the needs of all Nebraskans.

Paul noted that ORED was working on a new presidential initiative with UNL's Agricultural Research Division that is focused on research at the nexus of water, energy and food.

Nebraska Water Center (NWC) director Chittaranjan Ray reported on recent research grant successes within the NWC, including a nearly $1 million U.S. Department of Agriculture/NIFA grant to participate in a regional study of the Ogallala Aquifer being led by Colorado State University. Ray also reported on two recent Nebraska Environmental Trust grants and noted that NWC, in conjunction with Extension and the Daugherty Water for Food Institute, would soon be hiring a new communications liaison position that will work closely with university clients and collaborators to identify areas of mutual interest and areas where UNL faculty may be able to assist them.

Lee Orton, executive director of the Nebraska State Irrigation Association, reported on the most recent Water Leaders Academy class and on recent water management collaborative discussions that are underway with the Nebraska Water Balance Alliance.

Flanked by Rachael Herpel, Prem Paul, Monica Norby and Peter McCornick, Eugene Glock speaks at the April WRAP meeting.

A research collaborations retreat was held at UNL's City Campus Union in February.

NWC coordinates February research retreat

Steve Ress

The Nebraska Water Center (NWC) sponsored a retreat for University of Nebraska research faculty and staff at the University of Nebraska-Lincoln (UNL) city campus union on Tuesday, Feb. 16. About two dozen attended the daylong collaborative discussions.

According to NWC director Chittaranjan Ray, the primary purpose of these two to three times per year retreats is to gather research faculty, staff and off-campus collaborators to discuss where multi-disciplinary groups can work together on research grant proposals and to review and make brief presentations on recent research projects.

The previous retreat was held in October 2015 at the University of Nebraska, Kearney to facilitate participation by NU faculty and staff not working on the Lincoln campus.

In February, faculty and collaborators made about a dozen 10-minute presentations on current projects before getting down to examining research grant opportunities at the federal, state and local levels and forming into multi-disciplinary groups interested in possibly moving forward on proposals.

Many possible funding opportunities were examined, including National Science Foundation, U.S. Departments of Agriculture and Environmental Protection Agency, North Atlantic Treaty Organization, U.S. Bureau of Reclamation, Nebraska Environmental Trust, Nebraska Department of Environmental Quality, state water sustainability funds and others.

Those small group discussions continued through mid-afternoon, when the larger group reassembled to share ideas from the small group discussions. The final discussion identified several thematic areas where NU faculty and collaborators may be able to team for the writing of competitive proposals.

"From the level of participation and discussions, as well as real cooperation that may result, it was a very successful and well-used day," Ray said.

NWC, which is part of the Robert B. Daugherty Water for Food Institute at the University of Nebraska, is planning another faculty/staff research discussion on Aug. 30 at Lincoln's Wilderness Ridge Lodge.

2016 tour to Colorado's South Platte basin June 14-16, continued from page 1

for their own travel arrangements to and from the event. All other food, lodging, motor coach expenses and fees are covered in the tour registration.

In addition to CNPPID and the NWC, tour sponsors include the Daugherty Water for Food Institute at the University of Nebraska, UNL's Institute of Agriculture and Natural Resources, Nebraska Public Power District, the Lower Platte North Natural Resources District, Li-COR Biosciences and the Nebraska Water Balance Alliance.

Registration is $665 per person single occupancy or $565 per person double occupancy. Space is limited and registration is first-come, first-served. To register, email hrahmann@cnppid.com or phone (308) 995-3560.

Information is online at watercenter.unl.edu and cnppid.com and at facebook.com/NebraskaWaterCenter.

Steven W. Ress, communications coordinator, Nebraska Water Center, part of the Robert B. Daugherty Water for Food Institute at the University of Nebraska, (402) 472-3305, sress@nebraska.edu.

McCornick named next Water for Food Institute executive director

Melissa Lee

Peter G. McCornick

Peter G. McCornick, an internationally known expert in water, food and environmental research, has been named the next executive director of the Robert B. Daugherty Water for Food Institute at the University of Nebraska, NU President Hank Bounds announced today.

McCornick is currently deputy director general for research at the International Water Management Institute in Colombo, Sri Lanka, one of the world's foremost institutions dedicated to improving management of water and land resources to ensure food security and reduce poverty. He will succeed Roberto Lenton, who became WFI's founding executive director in 2012 and has led the institute through early phases of growth and success.

McCornick will assume his new role on Sept. 1.

"There is perhaps no more urgent challenge facing the world today than sustainably feeding the growing global population," Bounds said. "The University of Nebraska, through our Water for Food Institute, is uniquely positioned to lead the way in developing solutions. We are fortunate to have attracted someone with Peter McCornick's reputation and expertise to the executive director position. His deep knowledge of water and agricultural development in global contexts and his strong leadership skills will accelerate the impact the institute is making in ensuring water and food security in Nebraska and around the world."

McCornick said, "Roberto set the stage for the Water for Food Institute's global reach. I appreciate the tremendous work he has done in developing a strong team and growing the institute from an idea to a fully operational research center that is truly making a difference in improving water and food security for generations to come. I look forward to working with the University of Nebraska leaders, faculty and staff, as well as its many partners in the U.S. and internationally, to advance the institute's achievements and impact."

McCornick was a featured speaker at April's 2016 Water for Food Global Conference, which was held at Nebraska Innovation Campus in Lincoln. The annual conference is a keystone of the institute's efforts to share knowledge and affect change.

In his role at the International Water Management Institute, McCornick has already worked closely with WFI on research projects and events. He was instrumental in developing a Memorandum of Understanding between the two organizations that opened new opportunities for collaboration.

"Peter's familiarity with WFI and how we leverage the university's expertise and extend it through strong international partnerships is a tremendous advantage, as is his extensive experience in agricultural water management both in the U.S. and overseas," Lenton said. "He is well known and respected among international leaders in water, agriculture and the environment, and is ideally placed to help take the institute to even greater levels of success."

UNL Chancellor Ronnie Green said, "We had a highly competitive and thorough international search to identify candidates after Roberto announced his planned transition from the position last year. I'm very pleased with the search committee's work in attracting exceptional candidates and identifying Peter as the ideal person to expand the institute's role as a global leader in water and food security through research and policy, education and communication."

McCornick has dedicated his career to improving the understanding of sustainable management of water resources. He has led research and development programs on water, agriculture and the environment in Africa, Asia, the Middle East and the U.S. His areas of interest include water and food security, the water-food-energy nexus, water reuse, irrigation management, and water and climate adaptation. McCornick earned his doctorate degree in agricultural engineering from Colorado State University, is a licensed professional civil engineer in the State of Colorado, a member of the American Academy of Water Resources Engineers, and a senior fellow at Duke University's Nicholas Institute for Environmental Policy Solutions. He has published widely and regularly presents at major international events. McCornick was born in Scotland and grew up on a livestock and dairy farm.

Water for Food Institute Board Chair Jeff Raikes said: "I am grateful for Roberto's leadership as he has built a globally recognized institute for the critical nexus of water productivity and food security. As we started the search process for Roberto's successor, we aspired to find the right individual to take the wheel and guide the institute through its next phase of development. We are very fortunate to have found that leader - Peter McCornick."

Four from UNL to attend summer student research program at Czech Technical University

Steve Ress

IRES, or international research experiences for students, will help four University of Nebraska science and engineering students do collaborative research in the Czech Republic this summer.

"IRES is a National Science Foundation-funded program that is open to U.S. undergraduate and graduate students majoring in science or engineering," said Nebraska Water Center director Chittaranjan Ray, explaining that this part of IRES program will facilitate U.S.-Czech student research experience on "Research on Vadose Zone for Understanding Water and Chemical Transport at Various Scales" between the University of Nebraska-Lincoln and Czech Technical University (CTU) at Prague. It will be held at CTU June 5 to July 29.

Eighteen NU students applied to participate in the program, Ray said. From them, four were chosen to go. They include Craig Adams, a master's student in UNL"s School of Natural Resources, Mark Keck, a senior in UNL's Department of Agronomy and Horticulture, and Alison Kathol and Zach Mahon, master's students in UNL's Department of Civil Engineering.

The four will live on-campus in CTU dormitories and will work collaboratively with Czech students and researchers in the laboratory and at field sites within various watersheds in the Czech Republic. They will also analyze data for pore structure for undisturbed soil cores to examine preferential flow pathway and measure hydraulic conductivity of unsaturated soils in the field.

"A full slate of activities for the eight-week study program is being worked out in consultation with our faculty mentors at CTU. The students will enter weekly activities into the IRES web page.

"A mid-course and a final program evaluation will be conducted by a senior scientist from the Czech Academy of Sciences and our students will give final presentations during the last week of the program," Ray said.

The four NU students will each receive a $350 per week living allowance, a $550 per week stipend, and round trip airfare to Prague. Cultural activities and travel within the Czech Republic are included.

Ray is leading the program in collaboration with Michal Snehota and Martin Sanda at CTU.

More information on IRES and weekly student activities can be found at http://ires.unl.edu/.

University of Nebraska | NEBRASKA WATER CENTER
ROBERT B. DAUGHERTY WATER FOR FOOD INSTITUTE

2021 Transformation Drive, Suite 3220
P.O. Box 886204
Lincoln, NE 68588-6204

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UNL joins initiative to help farmers control the data they collect

Joe Luck

The University of Nebraska-Lincoln has joined a new initiative aimed at helping farmers better control, manage and maximize the value of the data they collect every day in their fields.

The Agricultural Data Coalition is the result of years of planning and coordination by UNL, AGCO, the American Farm Bureau Federation, Auburn University, CNH Industrial, Crop IMS, The Ohio State University, Mississippi State University, Raven Industries and Topcon Positioning Group.

The coalition's goal is to build a national online repository where farmers can securely store and control the information collected by their tractors, harvesters, aerial drones and other devices. Over time, that data can be scrubbed, synced and transmitted in an efficient and uniform way to third parties including researchers, crop insurance agents, government officials, farm managers, input providers and farm advisers.

"There have been extensive activities focused on agriculture data management platforms within the past couple of years and we're excited to be part of such advances in which the farmers' needs are at the core of the platform development process with input from a variety of industry partners," said Joe Luck, assistant professor in the Department of Biological Systems Engineering. "I think the development approach taken by the ADC will serve as an industry model for adding value to small and large farm operations with respect to agricultural data privacy, access and utilization."

A press briefing was held March 3 in New Orleans for media attending the annual Commodity Classic.

"The key is that farmers are in complete control, and they decide who is allowed access to their data," said Matt Bechdol, interim executive director of the coalition. "That's what sets ADC apart. This is not about profit for others, it's about streamlining data management, establishing clear lines of control and helping growers utilize their data in ways that ultimately benefit them."

Farmers interested in learning more about data collection and organizations interested in joining the coalition's efforts should visit http://www.agdatacoalition.org.